US Army Corps of Engineers®
Engineer Research and Development Center

Bluestone Lake Dam General Model Study

Description

A physical model investigation was conducted to evaluate structural modifications for safely increasing the discharge capacity of the Bluestone Dam, Hinton, West Virginia.

Issue

Bluestone Dam spans the New River at Hinton, WV forming Bluestone Lake, the third largest lake in West Virginia. At summer pool Bluestone Lake covers 2,040 acres and is 10.7 miles long. Bluestone Dam was constructed as part of the Kanawha River Basin flood control system primarily to reduce major flood damages along the New, Kanawha, Ohio, and Mississippi Rivers. The New River begins at Blowing Rock, North Carolina and flows north through Virginia into West Virginia. The New River is the oldest river in North America and partially follows the path of the prehistoric Teays River.

Physical model of Bluestone Dam, West VA

Products

At the request of the U.S. Army Engineer District, Huntington, a 1:65 scale physical model was designed and constructed at the U.S. Army Engineer Research and Development Center by the Coastal and Hydraulics Laboratory. The model reproduces the Bluestone Lake Dam, 1300-ft of the upper pool and 2100-ft of the tailrace. The model was used to evaluate the hydraulic conditions associated with an increase head (increased discharge). These conditions include extending the spillway rating curve, measuring hydraulic loads on the energy dissipation features of the spillway stilling basin and developing rating curves for discharge through the penstocks.

Benefits

Model results will provide design guidance for structural modifications necessary to insure safe passage of the new PMF.

Sponsors

U.S. Army Engineer District, Huntington

Point of Contact

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